

ELECTRIC MACHINE

ABSTRACT OF THE DISCLOSURE

[0089] An electric motor includes a Cockcroft ring for producing a magnetic field having
5 lines of flux extending in a first direction through an air gap. A disc capable of at least
two-dimensional motion in a plane relative to the Cockcroft ring provides a plurality of
conductive paths, each path having a segment that extends through the magnetic field in a
second direction so that interaction with an electric current passing through a particular
segment produces a thrust force acting on the disc via that segment. A multiphase toroid
10 shaped transformer induces electric currents to flow in the conductive paths and thus
through the corresponding segments. The direction and magnitude of the respective
thrust forces and thus the motion of the disc relative to the Cockcroft ring can be
controlled by varying the magnitude and/or phase relationship of the electric currents
flowing through the segments.